

TRANSMITTAL LETTER TO THE UNITED STATES  
DESIGNATED/ELECTED OFFICE (DO/EO/US)  
CONCERNING A FILING UNDER 35 U.S.C. 371ATTORNEY'S DOCKET NUMBER  
1549.001

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

09/786809

INTERNATIONAL APPLICATION NO.  
PCT/EP99/06264INTERNATIONAL FILING DATE  
Aug. 26, 1999PRIORITY DATE CLAIMED  
Sept. 9, 1998

## TITLE OF INVENTION

METHOD FOR PRODUCING A HYBRID FRAME OR HYBRID HOUSING AND CORRESPONDING HYBRID  
FRAME OR HYBRID HOUSING

APPLICANT(S) FOR DO/EO/US

Jorg Anderl, et al

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
  - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ has been transmitted by the International Bureau.
  - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ A copy of the International Search Report (PCT/ISA/210).
8. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
  - a. ☒ are transmitted herewith (required only if not transmitted by the International Bureau).
  - b. ☐ have been transmitted by the International Bureau.
  - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
  - d. ☐ have not been made and will not be made.
9. ☒ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
10. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).      UNSIGNED
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

## Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☐ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☒ Certificate of Mailing by Express Mail
20. ☐ Other items or information:

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 1.492 (a) (1) - (5)) : <div style="font-size: 24pt; font-weight: bold; text-align: center;">09/786809</div>	INTERNATIONAL APPLICATION NO. <div style="font-weight: bold; text-align: center;">PCT/EP99/06264</div>	ATTORNEY'S DOCKET NUMBER <div style="font-weight: bold; text-align: center;">1549.001</div>
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21. The following fees are submitted. <b>BASIC NATIONAL FEE ( 37 CFR 1.492 (a) (1) - (5)) :</b>				CALCULATIONS PTO USE ONLY	
<input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO .....				\$1,000.00	
<input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO .....				\$860.00	
<input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO .....				\$710.00	
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) .....				\$690.00	
<input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) .....				\$100.00	
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than _____ months from the earliest claimed priority date (37 CFR 1.492 (e)).				\$0.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	6 - 20 =	0	x \$18.00	\$0.00	
Independent claims	3 - 3 =	0	x \$80.00	\$0.00	
Multiple Dependent Claims (check if applicable). <input type="checkbox"/>				\$0.00	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$860.00	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable). <input type="checkbox"/>				\$0.00	
<b>SUBTOTAL =</b>				\$860.00	
Processing fee of \$130.00 for furnishing the English translation later than _____ months from the earliest claimed priority date (37 CFR 1.492 (f)).				\$0.00	
<b>TOTAL NATIONAL FEE =</b>				\$860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)) The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). <input type="checkbox"/>				\$0.00	
<b>TOTAL FEES ENCLOSED =</b>				\$860.00	
				Amount to be: refunded	\$
				charged	\$

☒ A check in the amount of **\$860.00** to cover the above fees is enclosed.

☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \_\_\_\_\_ to cover the above fees.  
A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **02-2105** A duplicate copy of this sheet is enclosed.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

SEND ALL CORRESPONDENCE TO:

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SIGNATURE

**Peter L. Berger**

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NAME

**24,570**

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REGISTRATION NUMBER

**March 8, 2001**

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DATE

sa01s006/Dr. L./Dr.Re/16.02.2001/sa

Voluntary, preliminary amendment

**Claims**

1. A method for producing a hybrid frame or hybrid housing, in which a  
5 leadframe with soldering and/or bonding tags after being placed in an  
injection moulding die is moulded with plastic to form a housing part of the  
hybrid frame or the hybrid housing, characterized in that the soldering and/or  
bonding tags of the leadframe are held down in the injection moulding die for  
the compensation of surface defects at least during a part of the injection  
10 moulding process by means of a stamp.
2. The method according to claim 1, characterized in that the stamp is a forming  
stamp.
3. The method according to claim 2, characterized in that the soldering and/or  
bonding tags are form-stamped during the moulding process.
- 15 4. The method according to claim 1, characterized in that a leadframe made  
from a plated strip is used.
5. A hybrid housing with a housing part and bonding tags of a leadframe  
projecting from the housing part, characterized in that at least one of the  
soldering and/or bonding tags has a form-stamping section, which can be  
20 acted upon by a stamp, and a holding section surrounding said form-stamping  
section.

6. A hybrid frame, characterized in that at least one of the soldering and/or bonding tags has a form-stamping section, which can be acted upon by a stamp, and a holding section surrounding said form-stamping section.

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**Method for producing a hybrid frame or hybrid housing and a  
corresponding hybrid frame or hybrid housing**

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**Description**

- 5 The invention relates to a method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags after being placed into an injection mould is held in this injection mould and is moulded with plastic to form a housing part of the hybrid frame or the hybrid housing, and to such a hybrid frame or such a hybrid housing.
- 10 Upon punching of the soldering and/or bonding tags of the leadframe a buckling due to punching occurs. This buckling due to punching can cause in a disadvantageous manner the buckling of the whole surface of the leadframe, so that there is no plane and regular surface especially of the soldering and/or

bonding tags. The soldering or bonding tags of the leadframe, which project from the plastic material after moulding, are not held during moulding, but it is only provided, that the injection mould is formed in a way, that the bonding tags cannot move in the plastic injection mould during the moulding process.

- 5 A method with the features mentioned at the beginning is known from the JP 57 010955. There a leadframe is put into a two-part mould. By joining together the two parts of the mould, the soldering and/or bonding tags of the leadframe are bent by the co-acting of projections in the one part of the mould and grooves in the other part. Furthermore, the frame of the leadframe is held and fixed during the moulding process by means of pressing rods. The bending of the soldering and/or bonding tags is not capable of compensating a buckling due to punching of the soldering and/or bonding tags, which occurs upon punching the leadframe, so that also after moulding the leadframe, in a disadvantageous manner, no plane and regular surface of the soldering and/or bonding tags is provided.
- 10
- 15 From the US 5,359,761 a method is known, in which a leadframe is put in a two-part mould and moulded with plastic material. Furthermore, there is provided a punching apparatus, with which a frame of the leadframe can be torn off along a predetermined breaking point, while the leadframe is positioned in the two-part mould.
- 20 From the EP 0 642 165 a hybrid frame made of plastic material with electric connection elements is known, which has a stiffening produced by a form-stamping.

It is therefore the object of the invention to further develop a method of the kind mentioned at the beginning, that the quality of the surface of the soldering and/or bonding tags of the hybrid frame or hybrid housing to be formed is improved.

25

This object is achieved according to the invention, in that the soldering and/or bonding tags of the leadframe are held down in the injection moulding die for the compensation of surface defects at least during a part of the injection moulding process by means of a stamp.

- 5 The method according to the invention distinguishes itself in that by the measures according to the invention the position of the individual soldering and/or bonding tags of the leadframe is well reproducible and can be dimensioned within close limits. The holding down of the individual bonding surfaces by the stamp during the moulding process brings forth in an advantageous manner, that surface defects of the leadframe are compensated. Furthermore, it is advantageous, that by the holding down of the bonding tags during the moulding process, the vibrational behaviour of the bonding tags is influenced in a positive manner. The invention has the further advantage, that in this manner the bonding surfaces are protected from moulding influences during the moulding process. The holding down of the soldering and/or bonding tags of the leadframe during the moulding process has the advantage, that in this manner position tolerances in a direction perpendicular to the surface of the leadframe are compensated, so that a good reproducibility in this z-axis is given as well.

- 20 An advantageous variant of the invention provides that as a stamp a forming stamp is used. This measure according to the invention has the advantage, that the soldering and/or bonding surfaces of the soldering and/or bonding tags which are produced in this way are of a high quality, especially if a polished forming stamp is used. Additionally, it is achieved in this way, that in the section of form-stamping at all positions of the soldering and/or bonding tags the same soldering and/or bonding conditions are given, so that the soldering and/or bonding process is not critical for the applicant and can therefore be dimensioned within wider limits.

Further advantageous variants of the invention are subject of the dependent claims.

Further details and advantages are to be inferred from the embodiment, which is described in the following by the single figure. It is shown in:

5     Figure 1     a schematic representation of a hybrid housing.

10     In figure 1 an embodiment of a hybrid housing 1 is shown, which is known and therefore not shown and described in detail, which is generally made up of a housing part 2, which is produced by moulding a leadframe in an injection mould, and of the bonding tags 3a-3c of the leadframe 3 projecting from the housing part 2. The bonding tags 3a-3c have a form-stamped section 3a'-3c', respectively, which is surrounded by a holding section 3a''-3c''.

15     The form-stamped section 3a'-3c' here is the section, on which during the moulding process in the injection moulding die a forming stamp not shown in the figure puts on in order to hold down the bonding tags 3a-3c during the moulding process.

20     It has to be stated here, that it is preferred, that the stamp holding down the bonding tags 3a-3c is made as a forming stamp, as in this manner the bonding tags 3a-3c are not only positioned and protected during the moulding process, but are at the same time form-stamped, so that this form-stamping process does not impose additional costs. It is preferred that here a forming stamp with a polished surface is used, which results in a bonding surface of a particularly high value and being particularly reproducible.



However, it has to be stressed, that for a multiplicity of applications it is sufficient, if the bonding tags are only held down by a corresponding stamp, i. e. that no form-stamping process occurs.

5 In the embodiment described above it is assumed, that it concerns a hybrid housing with bonding tags. But it is also possible, to form a hybrid frame with bonding tags by the same method. It is also possible that instead of the bonding tags soldering tags are formed.

It does not require any further explanation that the number of three bonding tags 3a-3c shown in the embodiment is only of exemplary character. It is of course possible to provide fewer or - what will occur more often in practice - more than three bonding tags.

### Claims

1. A method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags (3a, 3b, 3c) after being placed in an injection moulding die is moulded with plastic to form a housing part (2) of the hybrid frame or the hybrid housing (1), characterized in that the soldering and/or bonding tags (3a-3c) of the leadframe are held down in the injection moulding die for the compensation of surface defects at least during a part of the injection moulding process by means of a stamp.
2. The method according to claim 1, characterized in that the stamp is a forming stamp.
3. The method according to claim 2, characterized in that the soldering and/or bonding tags (3a-3c) are form-stamped during the moulding process.
4. The method according to one of the preceding claims, characterized in that a leadframe (3) made from a plated strip is used.
5. A hybrid housing with a housing part (2) and bonding tags (3a-3c) of a leadframe (3) projecting from the housing part (2), characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c'), which can be acted upon by a stamp, and a holding section (3a''-3c'') surrounding said form-stamping section (3a'-3c').
6. A hybrid frame, characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c'), which can be

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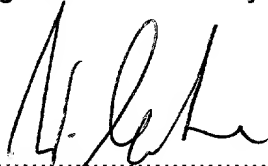
08 MAR 2001

DD01E057WOUS/sa010042/Dr.L.-Dr.Re/sa/23.02.2001

## Verification of Translation

I, Dr. Waldemar Leitner, Zerrennerstraße 23-25, D-75172 Pforzheim, Germany,  
German and European patent attorney, fully conversant with the German and  
English languages, hereby certify that I am the translator and that to the best of my  
knowledge and belief the following is a true translation of the International Patent  
Application No. PCT/EP99/06264 with the text as originally filed.

Signed this February 23, 2001



Dr. Waldemar Leitner  
-patent attorney-

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JCO8 Rec'd PCT/PTO 08 MAR 2001

DD01E057WO/sa01s002/Dr.L.-Dr.Re/23.02.01/sa

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**Method for producing a hybrid frame or hybrid housing and a  
corresponding hybrid frame or hybrid housing**

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**Description**

- 5 The invention relates to a method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags, made from a plated strip, after being placed into an injection mould is moulded with plastic to form a housing part of the hybrid frame or the hybrid housing, and to such a hybrid frame or such a hybrid housing.
- 10 Such a method is known. This method has the disadvantage, that upon punching of the soldering and/or bonding tags of the leadframe a buckling due to punching occurs. This buckling due to punching can cause in a disadvantageous manner the buckling of the whole surface of the leadframe, so that there is no plane and

regular surface especially of the soldering and/or bonding tags. A further disadvantage of the known method consists in that the soldering or bonding tags of the leadframe, which project from the plastic material after moulding, are not held during moulding, but that it is only provided that the injection mould is  
5 formed in a way, that the bonding tags cannot move in the plastic injection mould during the moulding process.

It is therefore the object of the invention to further develop a method of the kind mentioned at the beginning, that the quality of the leadframe before moulding has relatively little influence on the quality of the soldering and/or bonding tags of the hybrid frame or hybrid housing to be formed.  
10

This object is achieved according to the invention, in that the soldering and/or bonding tags of the leadframe are held in the injection moulding die at least during a part of the injection moulding process by means of a stamp.

The method according to the invention distinguishes itself in that by the measures according to the invention the position of the individual soldering and/or bonding tags of the leadframe is well reproducible and can be dimensioned within close limits. The holding down of the individual bonding surfaces by the stamp during the moulding process brings forth in an advantageous manner, that surface defects of the leadframe are compensated. Furthermore, it is advantageous, that  
15 by the holding of the bonding tags during the moulding process, the vibrational behaviour of the bonding tags is influenced in a positive manner. The invention has the further advantage, that in this manner the bonding surfaces are protected from moulding influences during the moulding process. The holding down of the soldering and/or bonding tags of the leadframe during the moulding process has  
20 the advantage, that in this manner position tolerances in a direction perpendicular to the surface of the leadframe are compensated, so that a good reproducibility in this z-axis is given as well.  
25

An advantageous variant of the invention provides that as a stamp a forming stamp is used. This measure according to the invention has the advantage, that the soldering and/or bonding surfaces of the soldering and/or bonding tags which are produced in this way are of a high quality, especially if a polished forming stamp is used. Additionally, it is achieved in this way, that in the section of form-stamping at all positions of the soldering and/or bonding tags the same soldering and/or bonding conditions are given, so that the soldering and/or bonding process is not critical for the applicant and can therefore be dimensioned within wider limits.

Further advantageous variants of the invention are subject of the dependent claims.

Further details and advantages are to be inferred from the embodiment, which is described in the following by the single figure. It is shown in:

Figure 1 a schematic representation of a hybrid housing.

In figure 1 an embodiment of a hybrid housing 1 is shown, which is known and therefore not shown and described in detail, which is generally made up of a housing part 2, which is produced by moulding a leadframe in an injection mould, and of the bonding tags 3a-3c of the leadframe 3 projecting from the housing part 2. The bonding tags 3a-3c have a form-stamped section 3a'-3c', respectively, which is surrounded by a holding section 3a"-3c".

The form-stamped section 3a'-3c' here is the section, on which during the moulding process in the injection moulding die a forming stamp not shown in the figure puts on in order to hold down the bonding tags 3a-3c during the moulding process.

It has to be stated here, that it is preferred, that the stamp holding down the bonding tags 3a-3c is made as a forming stamp, as in this manner the bonding tags 3a-3c are not only positioned and protected during the moulding process, but are at the same time form-stamped, so that this form-stamping process does not impose additional costs. It is preferred that here a forming stamp with a polished surface is used, which results in a bonding surface of a particularly high value and being particularly reproducible.

However, it has to be stressed, that for a multiplicity of applications it is sufficient, if the bonding tags are only held down by a corresponding stamp, i. e. that no form-stamping process occurs.

In the embodiment described above it is assumed, that it concerns a hybrid housing with bonding tags. But it is also possible to form a hybrid frame with bonding tags by the same method. It is also possible, that instead of the bonding tags soldering tags are formed.

It does not require any further explanation that the number of three bonding tags 3a-3c shown in the embodiment is only of exemplary character. It is of course possible to provide fewer or - what will occur more often in practice - more than three bonding tags.



### Claims

1. A method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags (3a, 3b, 3c), made from a plated strip, after being placed in an injection mould is moulded with plastic to form a housing part (2) of the hybrid frame or the hybrid housing (1), characterized in that the soldering and/or bonding tags (3a-3c) of the leadframe (3) are held in the injection moulding die at least during a part of the injection moulding process by means of a stamp.
2. The method according to claim 1, characterized in that the stamp is a forming stamp.
3. The method according to claim 2, characterized in that the soldering and/or bonding surfaces (3a-3c) are form-stamped during the moulding process.
4. A hybrid housing with a housing part (2) and bonding tags (3a-3c) of a leadframe (3) projecting from the housing part (2), characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c') and a holding section (3a''-3c'') surrounding said form-stamping section (3a'-3c').
5. A hybrid frame, characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c') and a holding section (3a''-3c'') surrounding said form-stamping section (3a'-3c').

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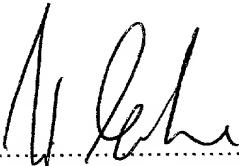
JCO3 Rec'd PCT/PTO 08 MAR 2001

DD01E057WOUS/sa010044/Dr.L.-Dr.Re/sa/23.02.2001

## Verification of Translation

I, Dr. Waldemar Leitner, Zerrennerstraße 23-25, D-75172 Pforzheim, Germany, German and European patent attorney, fully conversant with the German and English languages, hereby certify that I am the translator and that to the best of my knowledge and belief the following is a true translation of the pages amended under chapter II of PCT of the International Patent Application No. PCT/EP99/06264.

Signed this February 23, 2001



Dr. Waldemar Leitner  
-patent attorney-

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**Method for producing a hybrid frame or hybrid housing and a  
corresponding hybrid frame or hybrid housing**

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**Description**

- 5 The invention relates to a method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags after being placed into an injection mould is held in this injection mould and is moulded with plastic to form a housing part of the hybrid frame or the hybrid housing, and to such a hybrid frame or such a hybrid housing.

Upon punching of the soldering and/or bonding tags of the leadframe a buckling due to punching occurs. This buckling due to punching can cause in a disadvantageous manner the buckling of the whole surface of the leadframe, so that there is no plane and regular surface especially of the soldering and/or bonding tags. The soldering or bonding tags of the leadframe, which project from the plastic material after moulding, are not held during moulding, but it is only provided, that the injection mould is formed in a way, that the bonding tags cannot move in the plastic injection mould during the moulding process.

A method with the features mentioned at the beginning is known from the JP 57 010955. There a leadframe is put into a two-part mould. By joining together the two parts of the mould, the soldering and/or bonding tags of the leadframe are bent by the co-acting of projections in the one part of the mould and grooves in the other part. Furthermore, the frame of the leadframe is held and fixed during the moulding process by means of pressing rods. The bending of the soldering and/or bonding tags is not capable of compensating a buckling due to punching of the soldering and/or bonding tags, which occurs upon punching the leadframe, so that also after moulding the leadframe, in a disadvantageous manner, no plane and regular surface of the soldering and/or bonding tags is provided.

From the US 5,359,761 a method is known, in which a leadframe is put in a two-part mould and moulded with plastic material. Furthermore, there is provided a punching apparatus, with which a frame of the leadframe can be torn off along a predetermined breaking point, while the leadframe is positioned in the two-part mould.

From the EP 0 642 165 a hybrid frame made of plastic material with electric connection elements is known, which has a stiffening produced by a form-stamping.

It is therefore the object of the invention to further develop a method of the kind mentioned at the beginning, that the quality of the surface of the soldering and/or bonding tags of the hybrid frame or hybrid housing to be formed is improved.

5 This object is achieved according to the invention, in that the soldering and/or bonding tags of the leadframe are held down in the injection moulding die for the compensation of surface defects at least during a part of the injection moulding process by means of a stamp.

10 The method according to the invention distinguishes itself in that by the measures according to the invention the position of the individual soldering and/or bonding tags of the leadframe is well reproducible and can be dimensioned within close limits. The holding down of the individual bonding surfaces by the stamp during the moulding process brings forth in an advantageous manner, that surface defects of the leadframe are compensated. Furthermore, it is advantageous, that by the holding down of the bonding tags during the moulding process, the  
15 vibrational behaviour of the bonding tags is influenced in a positive manner. The invention has the further advantage, that in this manner the bonding surfaces are protected from moulding influences during the moulding process. The holding down of the soldering and/or bonding tags of the leadframe during the moulding process has the advantage, that in this manner position tolerances in a direction  
20 perpendicular to the surface of the leadframe are compensated, so that a good reproducibility in this z-axis is given as well.

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### Claims

1. A method for producing a hybrid frame or hybrid housing, in which a leadframe with soldering and/or bonding tags (3a, 3b, 3c) after being placed in an injection moulding die is moulded with plastic to form a housing part (2) of the hybrid frame or the hybrid housing (1), characterized in that the soldering and/or bonding tags (3a-3c) of the leadframe are held down in the injection moulding die for the compensation of surface defects at least during a part of the injection moulding process by means of a stamp.
2. The method according to claim 1, characterized in that the stamp is a forming stamp.
3. The method according to claim 2, characterized in that the soldering and/or bonding tags (3a-3c) are form-stamped during the moulding process.
4. The method according to one of the preceding claims, characterized in that a leadframe (3) made from a plated strip is used.
5. A hybrid housing with a housing part (2) and bonding tags (3a-3c) of a leadframe (3) projecting from the housing part (2), characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c'), which can be acted upon by a stamp, and a holding section (3a''-3c'') surrounding said form-stamping section (3a'-3c').

6. A hybrid frame, characterized in that at least one of the soldering and/or bonding tags (3a-3c) has a form-stamping section (3a'-3c'), which can be acted upon by a stamp, and a holding section (3a''-3c'') surrounding said form-stamping section (3a'-3c').

09282004 073004

(51) Internationale Patentklassifikation <sup>7</sup> :

B29C 45/14, H01R 43/24, H01L 23/498

A1

(11) Internationale Veröffentlichungsnummer: WO 00/13875

(43) Internationales

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CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,  
NL, PT, SE).

Veröffentlicht

Mit internationalem Recherchenbericht.

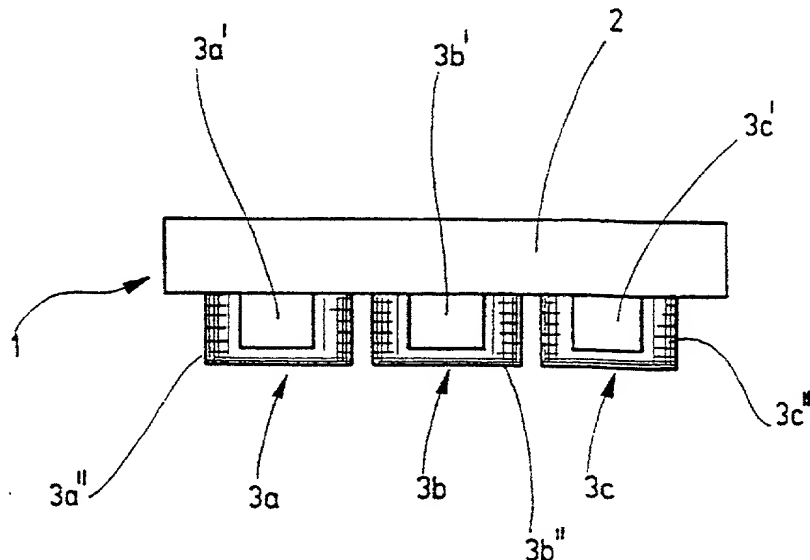
(54) Title: METHOD FOR PRODUCING A HYBRID FRAME OR HYBRID HOUSING AND CORRESPONDING HYBRID FRAME  
OR HYBRID HOUSING(54) Bezeichnung: VERFAHREN ZUR HERSTELLUNG EINES HYBRIDRAHMENS ODER HYBRIDGEHÄUSES SOWIE EIN  
DERARTIGER HYBRIDRAHMEN ODER EIN HYBRIDGEHÄUSE

(57) Abstract

The invention relates to a method for producing a hybrid frame (1) or hybrid housing. According to said method, a leadframe (3) with soldering and/or bonding tags (3a), made from a plated strip, is placed into an injection mould and moulded with plastic in order to form a housing part (2) of the hybrid frame or the hybrid housing (1). According to the invention, the soldering and/or bonding tags (3a) of the leadframe (3) are kept in the injection moulding die at least during part of the injection-moulding process, by means of a plunger.

(57) Zusammenfassung

Die Erfindung betrifft ein Verfahren zur Herstellung eines Hybridrahmens oder eines Hybridgehäuses (1), bei dem ein aus einem plattierten Band hergestellter Leadframe (3) mit Löt- und/oder Bondfahnen (3a) nach dem Einlegen in eine Spritzform zur Ausbildung eines Gehäuseteils (2) des Hybridrahmens oder des Hybridgehäuses (1) mit Kunststoff umspritzt wird. Erfindungsgemäß ist vorgesehen, daß die Löt- und/oder Bondfahnen (3a) des Leadframes (3) zumindest während eines Teils des Spritzvorgangs mittels eines Stempels im Spritzwerkzeug gehalten werden.





Docket No.  
1549.001

## Declaration and Power of Attorney For Patent Application

### English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**METHOD FOR PRODUCING A HYBRID FRAME OR HYBRID HOUSING AND CORRESPONDING  
HYBRID FRAME OR HYBRID HOUSING**

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on 08/26/99 as United States Application No. or PCT International  
Application Number PCT/EP00/06264  
and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)  
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)  
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)  
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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